

PATENT

IN THE CLAIMS:

Please amend claims 1, 3, 4, 7, 10, 12 and 16-18 as indicated in the following.

Claims Listing:

1. (Currently Amended) A method comprising:
determining an input resolution of an image;
determining an output resolution of an image; and
providing a control word comprising a first variable indicating a number of input pixels
~~in a scaling cycle, and at least two of a second variable, a third variable and a fourth variable, wherein thea second variable indicates indicating a number of output pixels in a scaling cycle, the third variable indicates a number of phases used in the scaling cycle, and the fourth variable indicatesand a third variable indicating a number of right shifts which, when applied to the second variable, indicates a number of phases used in the scaling cycle[[;]].~~
2. (Original) The method of claim 1, further comprising:
determining a greatest common denominator (GCD) for the input resolution and the output resolution; and
determining the first variable by dividing the input resolution by the GCD.
3. (Currently Amended) The method of claim 2, further comprising:
determining the second variable by dividing the output resolution by the GCD; and
~~determining the third variablea number of phases used in the scaling cycle by right shifting the second variable by the number of right shifts indicated by the third variable to obtain a value less than or equal to an available number of phases.~~
4. (Currently Amended) The method of claim 2, further comprising:
determining the second variable by dividing the output resolution by the GCD; and
~~determining the fourth-third variable to be a number of right shifts applied to the second variable to obtain a value less than or equal to an available number of phases.~~

PATENT

5. (Original) The method of claim 1, wherein determining the input resolution includes determining the input resolution by reading a register value.

6. (Original) The method of claim 5, wherein determining the input resolution includes the register value representing a number of input pixels in a specific dimension.

7. (Currently Amended) A data structure comprising:
a control word including;

a first variable indicating a number of input pixels in a scaling cycle; and
at least two of a second variable, a third variable and a fourth variable, wherein
the second variable indicates a number of output pixels in the scaling
cycle, the third variable indicates a number of scaling phases used in the
scaling cycle, and the fourth variable indicates a number of right shifts
which, when applied to the second variable, indicates a number of phases
used in the scaling cycle; and

a plurality of coefficient sets, one set for each used scaling phase.

8. (Original) The data structure of claim 7 wherein each one of the coefficient sets includes eight coefficients.

9. (Original) The data structure of claim 8 wherein a number of bits associated with the eight coefficients is 75 bits.

10. (Currently Amended) A method of scaling an image comprising:
incrementing a current phase location within a scaling cycle by a first variable to obtain a
first adjusted value, the first variable indicative of a number of input pixels in the
scaling cycle;
decrementing[[.]], in response to the first adjusted value being greater than [[the]]
second variable, the first adjusted value by one or more times [[a]]the second
variable indicative of a number of output pixels in the scaling cycle to obtain a
second adjusted value less than the second variable; and

PATENT

determining an index value to access a coefficient set by right shifting the second adjusted value a predetermined amount.

11. (Original) The method of claim 10 further comprising:
accessing the coefficient set based on the index value; and
determining a scaled pixel value based upon the coefficient set.

12. (Currently Amended) The method of claim 10 further comprising:
when the index value is within a first range, accessing the coefficient set from a mirror location;
when the index value is within a second range, accessing the coefficient set from a direct location; and
determining a scaled pixel value based upon the coefficient set.

13. (Original) The method of claim 12 wherein determining the scaled pixel value further comprises reversing the coefficients when the coefficient set is accessed from a mirror location.

14. (Original) The method of claim 10 further comprising:
receiving the predetermined amount from a control word.

15. (Original) The method of claim 10 further comprising:
determining the predetermined amount from a control word

16. (Currently Amended) A video scaler comprising:
a means for incrementing a current phase location within a scaling cycle by a first variable to obtain a first adjusted value, the first variable indicative of a number of input pixels in the scaling cycle;
a means for decrementing, in response to the first adjusted value being greater than [[the]]a second variable, the adjusted value by one or more times [[a]]the second variable indicative of a number of output pixels in the scaling cycle to obtain a second adjusted value less than the second variable; and

PATENT

a means for determining an index value to access a coefficient set by right shifting the second adjusted value a predetermined amount.

17. (Currently Amended) A system comprising:
an data processor for executing instructions; and
a memory for storing the instructions, the instructions to:

increment a current phase location within a scaling cycle by a first variable to obtain a first adjusted value, the first variable indicative of a number of input pixels in the scaling cycle;
decrement, in response to the first adjusted value being greater than [[the]]a second variable, the adjusted value by one or more times [[a]]the second variable indicative of a number of output pixels in the scaling cycle to obtain a second adjusted value less than the second variable; and
determine an index value to access a coefficient set by right shifting the second adjusted value a predetermined amount.

18. (Currently Amended) A computer readable media storing control information for implementing a plurality of operations, the operations to:

increment a current phase location within a scaling cycle by a first variable to obtain a first adjusted value, the first variable indicative of a number of input pixels in the scaling cycle;
decrement, in response to the first adjusted value being greater than [[the]]a second variable, the adjusted value by one or more times [[a]]the second variable indicative of a number of output pixels in the scaling cycle to obtain a second adjusted value less than the second variable; and
determine an index value to access a coefficient set by right shifting the second adjusted value a predetermined amount.